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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,441	06/30/2003	Gyu-Han Hwang	11038-093-999	6175

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EXAMINER

RIDDLE, KYLE M

ART UNIT PAPER NUMBER

3748

DATE MAILED: 04/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/611,441

Applicant(s)

HWANG ET AL.

Examiner

Kyle M. Riddle

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 9-11, 13, 15 and 16 is/are rejected.
- 7) ☒ Claim(s) 4-8, 12 and 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claims 5 and 14 recite the limitations "the intake-side oil supply passage" and "the exhaust-side oil supply passage" in page 11, lines 7-8 and page 13, lines 22-23. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 9-11, 13, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Uchida (U.S. Patent 6,035,817).

Uchida discloses a variable valve timing mechanism comprising:

- an enlarged diameter portion 97 with oil filter elements 98 held in place by recesses 99 receiving oil through passage 96 (column 6, lines 48-55 and Figure 7) in communication with main oil gallery 95 in the cylinder block (column 6, lines 37-40 and Figures 5 and 8);
- cylinder head assembly 51 with main cylinder head casting 52 and lower surface 53 in a sealing engagement with cylinder block (column 4, lines 29-32);
- main supply passages 101, 102 exiting the filter elements 98 (column 6, lines 53-60);
- branch passages 104 going to the inlet bearing surfaces 67, 69 which journal the intake and exhaust camshafts 61, 62, and also connected to passages 105 formed in camshafts 61, 62 which communicate longitudinally forming extending oil galleries 106, 107 which are cross-

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drilled as at 108, 109 so as to lubricate the various outlet bearing surfaces along the length of camshafts 61, 62 (column 6, lines 62-67 with column 7, lines 1-4, and Figures 3, 5, and 6);

- oil supply passage 102 extending to spool valves 111 and actuating solenoids 121 to control the variable valve mechanisms 82, 83 at the end of intake and exhaust camshafts 61, 62 (column 7, lines 6-13, lines 35-42, and Figures 4 and 5);

- circumferential grooves 115, 116 formed in the bearing caps 72 and bearing surfaces 67, 69 for communication with other grooves for supply and withdraw of fluid (column 7, lines 20-30).

Allowable Subject Matter

4. Claims 4-8, 12, and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of 3 patents.

- Uchida (U.S. Patent 6,032,629) discloses a variable valve timing arrangement with emphasis on camshaft bearing lubrication.

- Tosaka et al. (U.S. Patent 6,227,155) disclose a structure for lubricating camshaft with bearing grooves and not interfering with cylinder block/head mounting fasteners.

- Uchida (U.S. Patent 6,343,580) discloses a cam angle sensor mounting structure with a simplified oil supply and control arrangement.

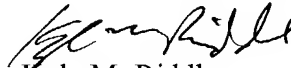
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Communication

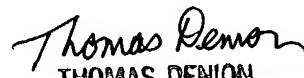
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyle M. Riddle whose telephone number is (703) 306-3409. The examiner can normally be reached on M-F (07:30-5:00) Second Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (703) 308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Kyle M. Riddle
Examiner
Art Unit 3748

kmr


THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700